



A Division of SET Environmental Inc.
735 North Water Street, Suite 510
Milwaukee, Wisconsin 53202
Phone (414) 224-8300
Fax (414) 224-8383

January 31, 2017

Ms. Nancy D. Ryan
Hydrogeologist
Wisconsin Department of Natural Resources
Remediation and Redevelopment Program
2300 North Dr. Martin Luther King, Jr. Drive
Milwaukee, Wisconsin 53212-3128

Reference: *WDNR Site Investigation/Remedial Action Plan Review May 18, 2016 Letter*
Former Wayne Pigment Corp.
300 South Barclay and 139 East Oregon Street
Milwaukee, Wisconsin
FID No. 241029470
BRRTS No. 02-41-553395 and 03-41-547627

Dear Ms. Ryan:

Key Engineering Group, Ltd. (KEY) submitted a *Site Investigation Report & Remedial Action Plan* (SIR/RAP) to the Wisconsin Department of Natural Resources (WDNR) for review for the above referenced site on April 7, 2016. Based on a review of the SIR/RAP, the WDNR determined that additional investigation was required to define the extent and degree of contamination on and off-site. After additional investigation, a reevaluation of the remedial options for the site was also requested. Below is a summary of the additional investigation and remedial actions requested by the WDNR (*italicized below*), followed by a prepared response on behalf of PPG PG LLC. This response is being submitted along with a Supplemental Site Investigation and Revised Remedial Action Plan dated January 31, 2017 which provides more details.

139 E. Oregon Street

Investigation of soil and groundwater contamination (chlorinated volatile organic compounds (CVOCs)) must be conducted on the off-site property at 300 S. 1st Street, west of borings SB-19 and B-2/TW-2.

- An off-site access agreement is necessary prior to completing additional investigation at 300 South 1st Street. The off-site building and pavement were recently razed and the property was repaved. KEY is in the process of determining what investigation data was previously collected from the property and attempting to secure an access agreement.

Additional investigation of CVOC soil contamination must be conducted to the east/southeast of SB-22 closer to building 34 to delineate the extent of contamination on the west side of building 34 in the area of the loading dock.

- Five borings (SB-72 through SB-76) were advanced from 2 to 8 feet below ground surface (bgs) using a hand auger or direct push drill rig. One soil sample per boring was laboratory analyzed including Protocol B analysis (landfill waste profiling) from boring SB-73, toxicity characteristic leaching procedure (TCLP) volatile organic compounds (VOCs) from borings SB-72 and SB-74, and VOCs from borings SB-75 and SB-76.
- Three borings (SB-77 through SB-79) were advanced to 2 feet bgs using a stainless steel hand auger along the property line south of Building 34 and west of Building 35. One soil sample per boring was collected from 0 to 2 feet bgs for laboratory analysis of VOCs.

Soil investigation must be conducted beneath buildings 33 and 34, especially adjacent to identified source areas to determine if and where significant CVOC contamination is present below the building.

Building 33

- Six soil borings (SB-42 through SB-47) were advanced in Building 33 to 15 feet bgs using a direct push rig. Two soil samples per boring were collected from a 2-foot interval above 4 feet bgs and below 4 feet bgs for laboratory analysis of VOCs.
- Three of the borings (SB-42, SB-45, and SB-47) were converted to temporary wells (TW-42, TW-45, and TW-47), respectively. The temporary wells were developed using a dedicated polyethylene bailer and groundwater samples were collected for laboratory analysis of VOCs. The borings and temporary wells were abandoned and capped with like material at the surface.

Building 34

- Five soil borings (SB-48 through SB-52) were advanced in Building 34 to 15 feet using a direct push rig. Two soil samples per boring were collected from a 2-foot interval above 4 feet bgs and below 4 feet bgs for laboratory analysis of VOCs.
- Three of the borings (SB-50 through SB-52) were converted to temporary wells (TW-50 through TW-52). The temporary wells were developed using a dedicated polyethylene bailer and groundwater samples were collected for laboratory analysis of VOCs. The borings and temporary wells were abandoned and capped with like material at the surface.

The vertical extent of soil and groundwater contamination in the main CVOC source area between buildings 33 and 34 (bounded by SB-39 and SB-24) is not defined. A monitoring well and piezometer should be installed in this area to assess groundwater. Soil sample(s) should be collected to evaluate the extent of vertical migration and to help determine an appropriate screen interval for the piezometer. Additional sampling in this area may also be beneficial in order to determine soil characteristics for treatment or disposal purposes.

- One soil boring (SB-65) was advanced to 50 feet bgs using dual tube sampling by a direct push drill rig. One soil sample was laboratory analyzed from a 2-foot interval above 4 feet bgs, and one soil sample was laboratory analyzed from a 2-foot interval from each 10-foot interval drilled. A total of 6 soil samples were analyzed for VOCs from this boring.
- Based on the proposed redevelopment plan that includes connecting Buildings 33 and 34, a piezometer was installed west of this proposed addition. Due to the proximity of existing monitoring well MW-2, an additional monitoring well is not planned in the area. The piezometer was installed using a sonic drilling rig to 45 feet bgs. The piezometer was developed and

groundwater samples were collected for laboratory analysis of VOCs, polycyclic aromatic hydrocarbons (PAHs), and Resource Conservation Recovery Act (RCRA metals), hexavalent chromium, and trivalent chromium.

Excavation Characterization

Collection of additional soil samples to better delineate the extent of proposed excavations and to characterize soil for disposal or treatment purposes should be considered.

- Ten soil borings (SB-63 through SB-72) were advanced from 12 to 15 feet bgs, except for SB-65 which was advanced to 50 feet bgs, using a direct push drill rig. Boring SB-65 was advanced to characterize soil for disposal, as well as determine an appropriate screen interval for a piezometer. Two soil samples per boring were collected from a 2-foot interval above 4 feet bgs and below 4 feet bgs for laboratory analysis of VOCs. Additionally, one soil sample per boring was submitted for laboratory analysis of TCLP VOCs for waste profiling.

Assess the potential threat of vapor intrusion to occupied buildings from possible migration of CVOC vapors within the utility corridor in Barclay St. or laterals near the CVOC source area.

- Three soil borings (SB-87 through SB-89) were advanced to 12 feet bgs near Buildings 33 and 34 water laterals using a direct push drilling rig. Two soil samples per boring were laboratory analyzed from a 2-foot interval above 4 feet and below 4 feet for laboratory analysis of VOCs.

300 S. Barclay St.

A soil and groundwater investigation for VOCs and metals including hexavalent and trivalent chromium beneath building 11 is required. Sub-slab vapor samples should be collected if possible. Samples should be collected beneath the east side of the building, along the south side beneath the building and in the vicinity of the sumps.

- Nine soil borings (SB-53 through SB-61) were advanced from three to 11 feet bgs using an electric jack hammer that pushed direct push sampling rods. One boring was advanced near six of the sumps, one boring was advanced adjacent to the sediment basin near the wastewater effluent sample location, and one boring was advanced along the east and south sides of the building. Two soil samples per boring were laboratory analyzed from a 2-foot interval above 4 feet and below 4 feet bgs. The soil samples were laboratory analyzed for VOCs, RCRA metals, trivalent chromium, and hexavalent chromium.
- Four of the borings (SB-54, SB-57, SB-59, and SB-61) were converted to temporary wells (TW-54, TW-57, TW-59, and TW-61), respectively. The temporary wells were developed using a dedicated polyethylene bailer and groundwater samples were collected for laboratory analyses of VOCs, dissolved RCRA metals, total chromium, trivalent chromium, and hexavalent chromium.
- Groundwater is located directly beneath the Building 11 basement floor. This makes the collection of sub-slab vapor samples infeasible.

Provide additional information regarding underground utilities below Building 11, sanitary connections, construction of the sumps, describing what they are connected to and where they discharge. Determine whether the sumps are currently discharging contaminated water to the combined sewer.

- The prior property owner and the City of Milwaukee were contacted to determine where the utility connections are made and review the aboveground piping for the Building 11 sumps to determine where sump water is discharged.

Significant petroleum and metals contamination has been identified in soil areas adjacent to the former tank area. The ASTs south of Building 11 have now been removed, thus permitting access to the area for further investigation. Soil and groundwater samples should be collected from below the former AST containment area to define the extent of petroleum and metals contamination.

- Five soil borings (SB-82 through SB-86) were advanced between 8 and 20 feet bgs in the aboveground storage tank (AST) containment area using a direct push drill rig. Two soil samples per boring were laboratory analyzed from a 2-foot interval above 4 feet and below 4 feet bgs. The soil samples were laboratory analyzed for VOCs, RCRA metals, trivalent chromium, and hexavalent chromium.
- Three of the borings (SB-83, SB-85, and SB-86) were converted to temporary wells (TW-83, TW-85, and TW-86), respectively. The temporary wells were developed using a dedicated polyethylene bailer and groundwater samples were collected for laboratory analyses of VOCs, dissolved RCRA metals, total chromium, trivalent chromium, and hexavalent chromium.

Additional groundwater monitoring wells are needed off-site to the east and south to determine the extent of groundwater contamination. One well should be located on the northeast side of Building 19, one well east of MW-15, and one well south and/or southeast of MW-8. These wells should be sampled for metals and VOCs.

- Off-site access agreements are necessary prior to completing the above requested additional investigation activities. KEY is in the process of attempting to secure access agreements with the off-site property owners. The forthcoming Supplemental SIR/RAP will not include investigation activities completed offsite. This data will be submitted under a separate cover when available.

A vapor intrusion assessment is required for the adjacent off-site buildings (No. 17, 19A, and 19) east of the site.

- An off-site access agreement is necessary prior to completing the above requested item. KEY is in the process of determining what investigation data was previously collected from the property and attempting to secure an access agreement.

General Site Investigation Requirements

Soil isoconcentration maps must be prepared/revised for all contaminants of concern and should include all sample locations, contaminant concentrations, dates of collection and depths where samples were collected. If samples were not collected at a location, that should be indicated on the figure or those points removed. Contaminant concentrations should be contoured to chemical specific residual contaminant levels (non-industrial direct contact, protection of groundwater). Preparation of these maps will facilitate identifying whether there are other areas where the degree and extent of contamination has not been fully defined.

- Isoconcentration figures are presented in the Supplemental SIR and Revised RAP for the primary contaminants of concern. The contaminant concentrations were contoured to a specific residual contaminant level for soil and the preventive action limit and enforcement standard for groundwater.

One or more geologic cross sections must be prepared for the site. Cross-section transects should extend across areas of higher contamination. Cross sections should include sub-surface features: stratigraphy, utilities, basement depth, sump locations/depths, contaminant source locations, vertical and horizontal extent of contamination in soil and groundwater, water table elevations, well screen lengths, and if possible soil analytical results.

- Geologic cross section is presented in the Supplemental SIR and Revised RAP through the highest chlorinated VOC area between Buildings 33 and 34 and through the highest metal area located east and south of Building 11.

Proposed Remedial Actions

KEY has proposed several remedial soil excavations to remove highly contaminated at the site. A CVOC source excavation is proposed for the Oregon St. property and an excavation of soil impacted with petroleum and metals is proposed for the Barclay parcel. Installation of sub-slab depressurization systems is proposed for buildings 11, 33 and 34 to address potential vapor intrusion into the buildings. Engineered barriers (building foundations, pavement) are proposed to eliminate the threat of direct contact with remaining soil/groundwater contaminants.

- *While the DNR concurs that source reduction in the area of CVOC contamination on the Oregon St. parcel will be required... Collection of additional soil samples to better delineate the extent of proposed excavations and to characterize soil for disposal or treatment purposes should be considered.*
 - Ten soil borings (SB-63 through SB-72) were advanced from 12 to 15 feet bgs, except for SB-65 which was advanced to 50 feet bgs, using a direct push drill rig. Boring SB-65 was advanced to characterize soil for disposal, as well as determine an appropriate screen interval for a piezometer. Two soil samples per boring were collected from a 2-foot interval above 4 feet bgs and below 4 feet bgs for laboratory analysis of VOCs. Additionally, one soil sample per boring was submitted for laboratory analysis of TCLP VOCs for waste profiling.
- *A remedial excavation on the 300 S. Barclay parcel is proposed in the area where significant metals and petroleum VOCs have been identified. The goal of the proposed source removal was not clearly presented. Remedial options should be reevaluated after the additional investigation has been conducted on the Barclay property and should clearly state what the proposed remedy is to address groundwater contamination and provide a rationale for how it will meet closure criteria for the groundwater pathway. As stated, groundwater monitoring will need to be a component of any groundwater remedy.*
 - Additional soil and groundwater investigation was completed south of Building 11. The remedial strategy for this area was reevaluated and revised remedial strategy is presented in the Supplemental SIR and Revised RAP.

Installation of a sub slab depressurization system is proposed for building 11 to address potential vapor intrusion from volatile contaminants. The proposed system design utilizing the current sumps should be reevaluated after the additional soil and groundwater assessment under the building has been completed and more information regarding sump construction is available. As with any vapor mitigation system, system verification sampling and indoor air samples will be required to document that the system is operating effectively and the risk from the vapor intrusion pathway has been interrupted.

- Additional investigation activities were completed under Building 11. This data is presented in the Supplemental SIR and Revised RAP, including a vapor mitigation system design. System verification sampling and indoor air sampling will be recommended as part of the remedial strategy to address vapor intrusion.
- *No remedial action was proposed or a rationale presented for no action required along the east property line. The need for a response action must be determined and, if appropriate, a remedy proposed.*
 - The area along the east property line is discussed in the Supplemental SIR and Revised RAP.
- *Based on the presence of historic fill material on this site, the property owner must comply with any conditions required by solid waste rules in ch. NR 500 Wis. Adm. Code rule series as long as any waste materials remain onsite. Any future redevelopment of this property must take into account the presence of waste materials and will require the issuance of an exemption from the DNR to build on an historic fill site prior to the start of any construction.*
 - Fill material was identified on the site. Geotechnical borings will be completed where the two building additions are planned. An exemption to build on historic fill prior to construction will be obtained.

Please feel free to call if you have any questions.

Sincerely,

KEY ENGINEERING GROUP, LTD.



Toni Schoen
Senior Project Manager



D'Arcy Gravelle, PG
Principal



Kenneth W. Wein, CHMM
Principal